2-5

MEMO

To: P. LaShoto

From: T. Sheehan 508 580 0100 X 1354

Date: Monday, March 29, 1999

Subject: 10 Year Study

Attached are the Brockton system improvements required to meet peak hour sendouts for the 1998-1999 through the 2007-08 winter seasons. The peak hour was taken from the study prepared by Stan Dziura.

The low pressure systems (Brockton, Taunton, and Attleboro) were not included in the study. These systems have been losing connected load due to customers being connected to the high pressure system.

The inlets to the system were set to a maximum of 100 psig and the lowest acceptable pressures were around 18 psig. The 12" feeder line to the Hanson regulators was increased to 225 psig during this study. If we have to go to 225 psig we should obtain a waiver to operate the 12" line at 275 psig MAOP.

For the studies Middleboro Gas and Boston Gas took 100 MCFH each. The load for Middleboro Gas was placed on the Middleboro Interconnect #1 for this study.

The system was run with 3 different scenarios:

1) Attleboro Gate station rebuilt and Sharon Gate *off*.

2) Attleboro Gate station rebuilt and Sharon Gate *on*.

3) Sharon Gate Station *on* and Attleboro Gate *not* rebuilt.

These scenarios did not take effect until 2001-2002 heating season. It was determined that Sharon Gate Station would be on line at this time. The 1999-2000 and 2000-2001 heating season were conducted as the system is today.

The Attleboro Gate Station should be rebuilt to handle the 1600 MCFH.

The Meadow Lane Gate Station is at its pipeline design capacity on 1999 - 2000 winter season for a peak day. At this time the Propane-Air Facility will handle the the over run of the Gate Station. We should look at the capacity of the Meadow Lane Gate Station for possible increase to capacity.

The Easton LNG Facility is at its capacity without the Sharon Gate Station today. The furture gas load only taxes the LNG Facility further. There is a new pump being installed at the LNG Facility today but it will be used in a back-up role. With Sharon Gate Station the role of Easton LNG is reduced. Easton LNG will not max until the 2003 - 2004 heating season.

Without the Sharon Gate Station the existing supply points will be at there maximum in the 2005 - 2006. At this time Sharon or another supply source will be needed.

Brockton System Improvement Dollars Listed By Year

YEAR	AMOUNT
1999-2000	$145,000

SCENARIO #1		SCENARIO #2		SCENARIO #3	
2000-2001	$1,954,600	2000-2001	$1,954,600	2000-2001	$1,154,600
2001-2002	$532,440	2001-2002	$2,000,000	2001-2002	$0
2002-2003	$712,000	2002-2003	$0	2002-2003	$1,787,170
2003-2004	$750,000	2003-2004	$811,590	2003-2004	$1,396,800
2004-2005	$2,582,930	2004-2005	$740,000	2004-2005	$2,298,110
2005-2006	$1,964,000	2005-2006	$129,200	2005-2006	$285,000
2006-2007	**********	2006-2007	$1,100,000	2006-2007	**********
2007-2008	**********	2007-2008	$1,856,000	2007-2008	**********

1998-99 222,020

1999 - 2000

Daily Sendout = 229,120 MMBtu

Install 2000 ft of 12" Coated Steel on Hayward St, Brockton, from Main St to Copeland St Replaces 2000 ft of 6" CI & 6" CS LP main.	$145,000.00

2000-2001

Daily Sendout = 235,780 MMBtu

SENARIO #3

12100 ' of 8" Coated Steel main on Rte 109 (Main St) Medway, Replaces 4" bare steel.	$581,000
2200' of 8" Coated Steel on Rte 109 (Main St) Millis, replaces 4" bs	$105,600
6500' of 12" Coated Steel on Canton St, Randolph, replaces 6" cs	$468,000
TOTAL	**$1,154,600**

SENARIO #1 & #2

Attleboro Gate Statin rebuilt to 1600 MCFH	$800,000
TOTAL	**$1,954,600**

2001-2002

Daily Sendout = 241,720 MMBtu

SENARIO #1

5280' of 12" Coated Steel on Milford St., Medway, replaces 6" Coated Steel		$380,160
2115' of 12" Coated Steel on High St, Medway, replaces 6" Bare Steel		$152,280
	TOTAL	**$532,440**

SENARIO #2

Sharon Gate Station built to 1600 MCFH		$2,000,000
	TOTAL	**$2,000,000**

SENARIO #3

No pipe needed		$0
	TOTAL	**$0**

2002-2003

Daily Sendout = 247,260 MMBtu

SENARIO #1

9000' of 8" Coated Steel Main St , Millis replaces 6" CS		$432,000
5800' of 6" PP on Main St , Walpole over railroad bridge		$280,400
	TOTAL	**$712,400**

SENARIO #2

No pipe needed	$0

SENARIO #3

21120' of 8" Coated Steel Washington St (rte 1) Attleboro. Replaces 6"		$1,013,760
9625' of 8" Coated Steel Newman Ave , Seekonk. Replaces 4" BS		$462,000
2150' of 6" PP Turner St, Attleboro. Replaces 3" BS		$81,700
2645' of 6" PP Mendon Rd, Attleboro. Replaces 3"BS		$100,510
3400' of 6" PP Collins St, Attleboro. Replaces 3" CS		$129,200
	TOTAL	**$1,787,170**

2003-2004

Daily Sendout = 253,400 MMBtu

SENARIO #1

2400' of 12" Coated Steel on Main St, Brockton. Replaces 6" CS & 4" CS	$250,000
4800' of 12" Coated Steel on Main St (rte 28) W. Bridgewater. Replaces 4" CS	$500,000
TOTAL	**$750,000**

SENARIO #2

10405' of 12" Coated Steel on S. Main St, Sharon. Replaces 3" BS& 2" BS	$811,590
TOTAL	**$811,590**

SENARIO #3

29100' of 8" Coated Steel on South St, Mansfield. Replaces 4" BS	$1,396,800
TOTAL	**$1,396,800**

2005-2006

Daily Sendout = 265,500 MMBtu

SENARIO #1

5035' of 6" PP on Bodwell St, Avon. Replaces 4"CS		$194,000
600' of 8" CS on Pond St, Avon. Replaces 3" BS		$35,000
15320' of 8" CS on Turnpike St. (rte 138) Canton. Replaces 6" CS		$810,000
10300' of 8" CS on Walpole St, (Sharon/Canton). Replaces 6" CS		$505,000
8668' of 8" CS on Foxboro St, Sharon. Replaces 6" CS		$420,000
	TOTAL	**$1,964,000**

SENARIO #2

3400' of 6" PP on Collins St, Attleboro. Replaces 3" CS		$129,200
	TOTAL	**$129,200**

SENARIO #3

5800' of 8" CS on Newman Ave, Seekonk. Replaces 4" BS		$285,000
	TOTAL	**$285,000**

2006-2007

Daily Sendout = 229,120 MMBtu

SENARIO #1

Model Crashes beyond REPAIR

SENARIO #2

18780' of 8" CS on Elm St Raynham & Pleasant St Bridgewater. Bridge Crossing over Rte 24		$1,100,000
	TOTAL	**$1,100,000**

SENARIO #3

Model Crashes beyond REPAIR

2007-2008

Daily Sendout = 277,380 MMBtu

SENARIO #1

Model Crashes beyond REPAIR

SENARIO #2

10300' of 12" CS on walpole St (Sharon,Canton). Replace 6" (today) Proposed for 8" Change as well.	$785,000
9400' of 12" CS on King St, Hanson. Replaces 3" BS	$676,800
5400' of 12" CS on Pleasant St, Hanson. Replaces 3" BS	$388,800
TOTAL	**$1,850,600**

SENARIO #3

Model Crashes beyond REPAIR